Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/004,304	BATRA ET AL.
	Examiner	Art Unit	
	Anh-Vu H. Ly	2667	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-19* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-19* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 16 is objected to because of the following informalities: in line 1, the term

"adapted to enable" is not a positive limitation but only requires the ability to so perform.

Therefore, it does not limit a claim to a particular structure and does not limit the scope of a

claim or claim limitation. Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or
> composition of matter, or any new and useful improvement thereof, may obtain a patent
> therefor, subject to the conditions and requirements of this title.

2.   Claims 16-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed

to non-statutory subject matter. "A computer readable medium" is a descriptive material. A

computer readable medium, by itself, hereby, does not contain the instructions and does not

cause a processor to execute the stored instruction to produce a useful, concrete, and tangible

result. Therefore, it is a non-statutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section
> 122(b), by another filed in the United States before the invention by the applicant for
> patent or (2) a patent granted on an application for patent by another filed in the United
> States before the invention by the applicant for patent, except that an international
> application filed under the treaty defined in section 351(a) shall have the effects for
> purposes of this subsection of an application filed in the United States only if the

international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 1-13, 15-16, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Garcia-Luna-Aceves et al. (US Pub 2002/0141479 A1). Hereinafter, referred to as Garcia-Luna-Aceves.

With respect to claims 1 and 16, Garcia-Luna-Aceves discloses a method of frequency hopping (Fig. 5) comprising:

on a first channel (Fig. 5, hop h1 or channel frequency h1), transmitting data from a master to a slave (Fig. 5, node y or master node transmitting data to node x or slave node during time slots t2-t8 of channel hop h1); and transmitting data from the slave to the master on the first channel (Fig. 5, node x transmitting to node y during time slots t10-t16 of channel hop h1).

With respect to claim 2, Garcia-Luna-Aceves discloses that wherein the first channel is a good channel (page 6, 80th paragraph and Fig. 5 – the RTS control packet should always be sent in clear because it has been assumed that a perfect channel is provided and that the hopping sequence given between a pair of nodes to send data does not collide at any time with any other hopping sequence).

With respect to claim 3, Garcia-Luna-Aceves discloses that wherein the first channel is a bad channel (page 9, 132nd paragraph – when the number of collocated nodes is high, the probability of interference from adjacent frequency channels increases which may introduce errors during the transmission of data packets. Therefore, adjacent channel hops may interfere with channel hop h1 causing errors to occur in the channel hop h1).

With respect to claim 4, Garcia-Luna-Aceves discloses that wherein the first channel is selected via a random hopping sequence (Fig. 2, at step 14, engaging over a channel hop only when data is available for sending. This implies that random channel hop in the common channel hopping sequence is selected only when data is available, e.g., channel hop h1, h2, h3, etc...).

With respect to claim 5, Garcia-Luna-Aceves discloses that wherein the first channel is selected via an intelligent frequency hopping sequence (Fig. 5 illustrates that channel hop h1 is selected right away or intelligently selected when data is available for transferring between nodes x and y).

With respect to claim 6, Garcia-Luna-Aceves discloses that wherein the channel selected for transmitting data from the slave to the master is selected via an enhanced hopping sequence algorithm (Fig. 5, node x transmitting to node y during time slots t10-t16 of channel frequency h1 according to RICH protocols).

With respect to claim 7, Garcia-Luna-Aceves discloses that wherein the transmitting of data from the master to the slave takes place in a first time slot (Fig. 5, t2) and the transmitting of data from the slave to the mater takes place in a second time slot (Fig. 5, t10. Herein, t2 and t10 are considered as a first time slot and a second time slot since t2 occurs before t10).

With respect to claim 8, Garcia-Luna-Aceves discloses that wherein the frequency band

is a Bluetooth frequency band (page 2, 13th paragraph and Fig. 2 – a MAC protocol taking

advantage of characteristics of FHSS radios operating in ISM bands while assuring that

transmissions are free of collisions. It is known that Bluetooth frequency band is also an ISM

band, 2.4 GHz band).

With respect to claim 9, Garcia-Luna-Aceves discloses that wherein transmitting data

from the slave to the master is in response to the transmitting of data from the master to slave

(Fig. 5, channel hop h1, node x transmitting data to node y during time slots t10-t16 after

receiving data transmitted from node y during time slots t2-t8).

With respect to claim 10, Garcia-Luna-Aceves discloses that in a frequency band, a

system for channel hopping (Fig. 2), comprising:

An enhanced master (Fig. 5, node y using RICH protocols); and an enhanced slave (Fig.

5, node x using RICH protocols) communicatively coupled to the enhanced master (Fig. 5, nodes

x and y exchange data via a wireless medium).

With respect to claim 11, Garcia-Luna-Aceves discloses that wherein the enhanced

master comprises a computer processor (Fig. 5 illustrates that node y transmitting data to node x

and acknowledging data from node x during channel hop h1. This implies that a computer

processor is inherently resided within the node y for generating and acknowledging data).

With respect to claim 12, Garcia-Luna-Aceves discloses that wherein the enhanced

master comprises a digital signal processor (Fig. 5 illustrates that node y transmitting data to

node x and acknowledging data from node x during channel hop h1. This implies that a DSP

processor is inherently resided within the node y for generating and acknowledging data).

With respect to claim 13, Garcia-Luna-Aceves discloses that wherein the enhanced slave

is a thin client (Fig. 5, node x).

With respect to claim 15, Garcia-Luna-Aceves discloses that wherein the enhanced slave

is active (Fig. 5 illustrates that during t10-t16, node x transmits data to node y).

With respect to claim 19, Garcia-Luna-Aceves discloses that wherein the computer

readable medium is maintained in a specific computer machine (Fig. 5, node y must including a

memory for storing the instructions to be executed by nodes as shown Fig. 2).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or
> described as set forth in section 102 of this title, if the differences between the subject
> matter sought to be patented and the prior art are such that the subject matter as a whole
> would have been obvious at the time the invention was made to a person having ordinary
> skill in the art to which said subject matter pertains. Patentability shall not be negatived
> by the manner in which the invention was made.

4.   Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Garcia-Luna-

Aceves et al. (US Pub 2002/0141479 A1) in view of Haartsen (US Patent No. 6,754,250 B2).

With respect to claim 14, Garcia-Luna-Aceves discloses a network node employing RICH protocols (Fig. 5, node x). Garcia-Luna-Aceves does not explicitly disclose that the network node is a display device. Haartsen discloses that network nodes of a FHSS system including laptops, phones, hand-held devices, etc... (Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a computer laptop as a network node in Garcia-Luna-Aceves's system, as suggested by Haartsen, due to its mobility and work-related capabilities.

5.   Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcia-Luna-Aceves et al. (US Pub 2002/0141479 A1) in view of Thompson et al (US Pub 2002/0022483 A1). Hereinafter, referred to as Garcia-Luna-Aceves and Thompson.

With respect to claims 17 and 18, Garcia-Luna-Aceves discloses an execution of a data transfer within a single hop (Fig. 2). Therefore, a computer readable medium or a memory is necessary for storing the execution code. Garcia-Luna-Aceves does not disclose that the medium is a RAM and/or a CD-ROM. Thompson discloses a medium can be CD-ROM, floppy disks, RAMs, etc... (page 9, 101st paragraph). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a RAM and/or a CD-ROM in Garcia-Luna-Aceves's system, as suggested by Thompson, since RAMs and CD-Rom are well known devices for storing data and information.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Lansford (US Pub 2003/0193991 A1) discloses fixed frequency transceiver for use in a frequency hopping system.

Honkanen et al (US Patent No. 6,760,317 B1) discloses adaptive transmission channel allocation method and system for ISM and unlicensed frequency bands.

Almgren et al (US Patent No. 6,298,081 B1) discloses channel hopping in radio communication system.

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H. Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

avl